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THE ADRENAL STEROIDS AND ACTH IN SURGERY

NORTON W. VOORHIES, M. D.
NEW ORLEANS

The adrenal steroids and ACTH have proved to be of infinite value in surgery, as well as in other fields of medicine. In selected cases it is now possible to prepare a patient for needed surgery, who would otherwise be considered too poor a risk to operate upon.

The adrenocorticotropic hormone, a secretion of the adenopituitary, stimulates the adrenal cortex to produce hormones, and from studies on adrenal venous blood in the human these are mainly: hydrocortisone, corticosterone, aldosterone, and an androgenic 17 ketosteroid, androstenedione. Hydrocortisone is present in the greatest amount.[1] The effects of ACTH in the human are, for all practical purposes, similar to cortisone and hydrocortisone.

The adrenal steroids now in current use include hydrocortisone as an oral, intramuscular, and intravenous drug, and hydrocortisone acetate which is quite insoluble intramuscularly, and is used for intra-articular injection.

CLINICAL AND METABOLIC EFFECTS

Hydrocortisone has about twice the metabolic effect of cortisone.

Cortisone as an acetate is available as an oral, as well as an intramuscular drug.

The oral preparations of cortisone and hydrocortisone have an immediate clinical and metabolic effect, and the duration of action is about six to eight hours. Contrariwise, the full clinical and metabolic effect of these drugs given intramuscularly is delayed for several days and persists for four or five days. For this reason, the intramuscular route has an advantage in certain postoperative situations.

Prednisone and prednisolone, new derivatives of cortisone and hydrocortisone; are useful in certain disease states because of the reduced sodium retaining effect and the unaltered anti-inflammatory property.

Hydrocortisone and cortisone, since they more closely resemble the total adrenal cortical secretion, are the drugs of choice in adrenal cortical insufficiency.

Cortisone and ACTH produce: (1) Na. and Cl. retention; (2) water retention; (3) excretion of K; (4) an increase in the urinary output of N, Ca. and P (negative N balance); (5) increased gluconeogenesis from P and possible F; (6) a reduction in eosinophiles and lymphocytes; and (7) an increase in platelets, red blood cells, and neutrophiles.

ACTH and the adrenal steroids have a strong anti-inflammatory effect.

The effect on blood coagulation is poorly understood. ACTH and cortisone increase capillary resistance and it is believed that this property is responsible for the success in stopping hemorrhage in many cases. The increase in capillary resistance, together with an increase in platelets, are the important factors responsible for cessation of bleeding in

thrombocytopenic purpura.

ACTH and cortisone are thought by some to increase the coagulability of the blood. Cosgriff [2] reported pulmonary embolism in 3 patients, and Eisenmenger [3] described portal thromboses in 3 cirrhotics treated with cortisone and ACTH.

ACTH and cortisone when given in sufficient dosage produce hyperadrenalism or Cushing's syndrome.

INDICATIONS FOR USE IN SURGICAL DISEASES

There are certain diseases which are made amenable to surgery because of preliminary use of the adrenal steroids or ACTH.[4]

Patients with chronic ulcerative colitis are frequently improved to a point where colectomy can be performed with reasonable safety.

Similarly, patients with regional ileitis may be prepared for surgery with some improvement in their general condition, though improvement has been less spectacular than it has been with chronic ulcerative colitis.

The use of the adrenal steroids and ACTH in preparing a patient for splenectomy in hypersplenic states has been particularly effective. There is often an increase in blood platelets and red blood cells and a cessation of bleeding, all of which greatly reduces the hazards of surgery.

Surgery of the adrenal glands is made possible because of the availability of the adrenal hormones. Subtotal or bilateral total adrenalectomy has been performed for hypertension, Cushing's syndrome, primary aldosteronism, adrenogenital syndrome, and pheochromocytoma. Total adrenalectomy has been done in cirrhotics with ascites and for the palliative treatment of metastatic carcinoma of the breast and prostate. These patients must be carried through the critical operative and postoperative periods, and the dosage must be later carefully regulated depending upon the amount of functioning adrenal tissue which remains.

The drug of choice during the preoperative and immediate postoperative periods is hydrocortisone (compound F). This should be given intravenously in an infusion (100-300 mg. in twenty-four hours, dissolved in 5 per cent dextrose in distilled water) as a slow drip. The rate of flow is dependent upon the blood pressure and the condition of the patient. This is later followed by cortisone, 25 mg. every eight hours, intramuscularly, with a gradual reduction in dosage until eventually the oral drug can be used. In cases of subtotal adrenalectomy the maintenance requirement is unknown since the remaining tissue may atrophy or hypertrophy. Several weeks after surgery the need of maintenance therapy can be determined by noting the eosinophilic response to ACTH after twelve to forty-eight hours of withdrawal of all steroid therapy. Many of these patients with functioning adrenal tissues will need adrenal hormone during situations producing stress. Of course, the patient who has had total adrenalectomy will require adrenal hormone the remainder of his life.

Many patients, anorexic and emaciated by previous disease, are given cortisone for its appetite stimulating and euphoristic effect. However, it is usually desirable to also include testosterone for its N retaining property.

The adrenal steroids have been used to treat thyroid crisis, pancreatitis, and thrombophlebitis. Since other therapeutic measures are usually used at the same time, it is difficult to asses their true value. However, since the adrenal steroids reduce inflammation, it is anticipated that they would be effective.

Cortisone and hydrocortisone seem to be of value in the treatment of tetanus according to the report of Lewis. ACTH and cortisone are effective in tenosynovitis, bursitis, and subacute thyroiditis, and have been of value in preventing intraperitoneal adhesions. These drugs do not seem to interfere with wound healing in moderate dosage.

Surgical cases may go into shock from adrenal insufficiency when the adrenal glands are invaded by tumor. Such a condition when suspected should be treated with hydrocortisone intravenously, then

later with the intramuscular and oral drugs.

CONTRAINDICATIONS

Contraindications to the use of ACTH and cortisone are definite and should be looked for:

1. Tuberculosis can be activated and made to progress by the use of these drugs. In cases in which tuberculosis is known to be present and the need for cortisone is urgent, streptomycin and PAS are recommended and should be given simultaneously.

2. Peptic ulcer, active or recently healed, is considered a contraindication.

3. Psychoses are a contraindication. It is believed that those patients who become psychotic while receiving ACTH or cortisone are individuals who have had a preexisting psychosis.

4. Infection is a contraindication unless combatted with an appropriate antibiotic.

5. Cushing's syndrome, malignant hypertension, uremia, congestive heart failure, diabetes, and coronary heart disease are generally considered contraindications to the use of ACTH and cortisone, though they may be used in selected cases.

Patients who have had adrenal steroids in the preceding three to six months, or who have had adrenal steroids for five days before surgery, should have additional hormone at the time of surgery because of the danger of developing adrenal insufficiency in the early postoperative period. Salassa, Bennett, Keating, and Sprague [5] reported 2 cases in which acute postoperative adrenal insufficiency was regarded as the cause of death. A similar case was reported by Lewis et al.[6] Fraser [7] also reported a death from adrenal insufficiency following an orthopedic operation. All of these patients were given cortisone.

Both ACTH and cortisone produce Crooke's changes in the basophiles of the anterior pituitary (i.e., hyalinization and vacuolization). These changes are found in patients with cortical adrenal tumors. Patients treated with cortisone almost invariably develop adrenal atrophy. In patients treated with ACTH the adrenal cortex may be increased in size or not changed. Many believe, including Lewis et al.,[6] that ACTH should be used to stimulate the adrenal after cortisone has been stopped. Salassa and his group contend that while adrenal hyperplasia will occur and may last for some time after ACTH has been discontinued, there is reason to doubt that increased functional activity of the adrenal cortex will continue. Because of the pituitary changes that ACTH is capable of producing, they believe that endogenous secretion is depressed by exogenous corticotropin and that adrenal insufficiency is likely to occur.

SUMMARY

In summary, ACTH and the adrenal steroids have done much to make surgery possible in selected cases. However, these drugs are probably the most potent used in clinical medicine and require detailed knowledge of their action, if the patient is to be spared undesirable consequences.

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CONGENITAL DIAPHRAGMATIC HERNIA OF THE POSTEROLATERAL TYPE *

WITH REPORTS OF TWO CASES, ONE OF WHICH WAS ELEVEN HOURS OLD AT THE TIME OF SURGERY

R. GORDON HOLCOMBE, JR., M. D.
LAKE CHARLES

INTRODUCTION

Congenital diaphragmatic hernia, while not common, occurs more frequently than

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is generally realized. This condition is associated with such grave alterations in cardiorespiratory mechanics in the newborn that it usually proves fatal within the first few days of life if not recognized promptly and corrected surgically. Accordingly, it is the responsibility of all entrusted with the care of newborn infants to be capable of recognizing this anomaly, when present, so that immediate life saving surgery can be performed. The purpose of this presentation is to review the various clinical aspects of this condition with emphasis on the high fatality rate among cases which are diagnosed late or not at all, in contradistinction to the favorable outlook among those which are recognized early and subjected to immediate surgical correction.

INCIDENCE AND MORTALITY RATE

The true incidence of congenital defects of the diaphragm in newborns is not known. However, there are a sufficient number of individual and collective case reports in the literature to establish the fact that they are not uncommon. At the Charity Hospital in New Orleans [1] for the ten year period 1943 through 1952, there were 84,673 viable births with 20 cases of congenital diaphragmatic hernia having been recorded, or an incidence of 1 in every 4,233 viable births. These included cases recognized either before or after death. With the present day acceleration of moving postpartal cases with the infant from the hospital, it is entirely possible that there may have been other cases among these 84,673 viable births developing respiratory symptoms after returning home, with death occurring without establishment of the diagnosis and consequent exclusion from these figures. This factor, it would seem, must be considered in the appraisal of statistics from all institutions, whether they be private or charity. At the Babies Hospital of the Columbia Presbyterian Medical Center in New York City, Donovan [2] reported 17 cases of congenital diaphragmatic hernia clinically recognized out of approximately 60,000 hospital admissions. Personal correspondence with Dr. Rustin McIntosh,[3] Director of the Pediatric Service of this same institution reveals that of the last 1,400 autopsies representing children of all ages up to 12 years, there were 13 examples of diaphragmatic hernia. Most of them were in the newborn age group. To quote Dr. McIntosh:

"The general impression of our pathologists is that in many instances this is a fatal condition, incompatible with long survival, and for this reason a number of the patients so afflicted survive only a few hours, and, consequently, their condition is discovered only at autopsy".

In a report by Greenwald and Steiner,[4] of 30 newborns presenting this problem, 13 died within one hour of birth, 9 within twenty-four hours, and 2 within thirty-six hours, only 6 of the 30 surviving to represent diagnostic and therapeutic problems. Arnheim's [5] review of the literature on 210 reported cases of congenital diaphragmatic hernia revealed 75 per cent of the cases unoperated upon to be dead by the end of the first month of life. Inasmuch as the percentage of post mortem examinations on infants dying shortly after birth is frequently low in hospitals not devoted solely to pediatrics and, since this urgent condition probably often results in death before diagnosis is established, it becomes readily apparent that the incidence may be considerably higher than the current hospital records would indicate. It seems reasonable to presume that the present incidence as revealed by records in any given hospital series is in direct proportion to the number of post mortem examinations performed on newborns dying within the first few days of life.

The realization that most cases die within a few days of birth unless operated upon has effected in recent years an about face therapeutically from the former conservative approach of delaying surgery, to the current one of immediate surgical intervention in recognized cases with a consequent reduction in operatve mortality from a previous 50 to 75 per cent, to a current figure of 5 to 10 per cent. Thus, with the operative mortality becoming progressively reduced by means of im-

proved surgical approach, better preoperative and postoperative care, and more skillfully administered anesthesia, further improvement in the care of this surgical emergency lies in the identification of a higher percentage of these cases as soon after birth as possible.

PATHOLOGIC ANATOMY CORRELATED WITH ABNORMAL DEVELOPMENT

The diaphragm is derived from the septum transversum anteriorly, the root of the dorsal mesentery posteriorly, the pleuroperitoneal folds, and elements of the body wall laterally and posterolaterally (Fig. 1). Initially, the septum transver-

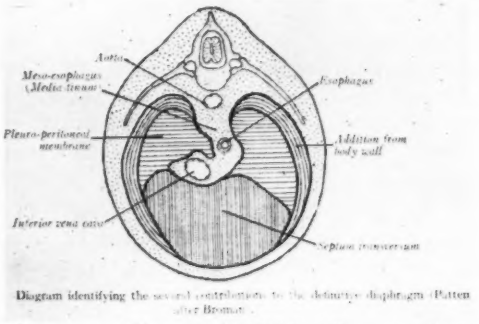

Figure 1.—Diagram identifying the several contributions to the definitive diaphragm. (From Patten: Human Embryology, 2d. Ed. 1953. Blakiston Division, McGraw-Hill Book Co. after Broman.

sum and fold from the root of the dorsal mesentery meet and fuse, thereby forming a bridge across the coelomic cavity to separate the abdominal viscera from the mediastinal structures and anterior portion of the pleural cavities. Inasmuch as the pleuroperitoneal folds proceed inward at a slightly later stage of development, there is a period when an opening exists between the abdominal and pleural cavities, creating the so-called pleuroperitoneal canals. The pleuroperitoneal folds then progress anteriorly and medialward to join the fused septum transversum and fold from the root of the dorsal mesentery, thereby closing these canals. These folds at this phase of development are nothing more than double layers of serous membrane with pleura on the thoracic side and peritoneum on the abdominal side of the fold. Finally, mesodermal tissue from the body wall moves between these membranes to form the striated muscle of the completed diaphragm. Failure of completion on the part of any one of these processes by the time of birth results in a congenital defect. The locations of these defects in the order of frequency are: (1) Left posterolateral; (2) right posterolateral; (3) paraesophageal; (4) retrosternal, parasternal, or as Harrington[6] prefers to refer to them, subcostosternal, through the foramen of Morgagni or Lerrey's spaces, which are normally devoid of muscle and traversed only by the superior epigastric artery and lymphatics. The first two of these defects, namely the right and left posterolateral herniae through the foramen of Bochdalek, represent the most common of all congenital diaphragmatic herniae constituting some 90 per cent of the cases in Gross'[7] series of 91 cases. It is with these two groups specifically that the ensuing remarks of this paper shall be concerned, but it can be readily appreciated that the two rarer groups will present similar though less dramatic clinical findings, and require essentially the same surgical approach.

POSTEROLATERAL DIAPHRAGMATIC HERNIAE

Left sided herniae are five times as frequent as the right sided ones. That they are likewise the most dangerous is attested by Thomason's[8] statement: "The infrequent findings in adults of the commonest childhood hernia of the diaphragm is because over 75 per cent of children suffering from it die before they are a year old". The infrequency of survival to adulthood is emphasized by Robert T. Campbell,[9] of St. Mary's Hospital in London, who reported the case of a 79 year old male presenting this condition. He was able to collect only 8 other cases from the world literature dating back to 1910.

The size of the defect, which ranges from a rare complete absence of the posterolateral portion of the diaphragm to the more common less extensive opening referred to as the foramen of Bochdalek depends on the stage at which failure of development has occurred in the

pleuroperitoneal fold. The defect, according to Harrington [10] is usually triangular in shape with the apex toward the midportion of the diaphragm. While it may extend completely to the thoracic wall in the larger defects, there is usually a peripheral rim or shelf of muscular tissue covered by peritoneum below and pleura above extending along the thoracic wall. In our own small experience with two cases, the defects would be more accurately described during expiration as semilunar in shape rather than triangular, with the concavity conforming to the curve of the posterolateral wall of the abdomen and thorax, and the convexity conforming to the free edge of unattached diaphragm. During inspiration with contraction of the free edge of the diaphragm the defect appeared elliptical.

According to Gross,[7] in 90 per cent of these openings there is no serous membrane covering, and consequently no hernial sac, the pleura and peritoneum being continuous over the edge of the muscular defect. In the other 10 per cent the pleuroperitoneal membrane has fused with the other elements of the diaphragm, but there has been a failure of the muscular elements to develop from the thoracic wall between the leaves of the pleuroperitoneal fold. Cases with such sacs will rarely exhibit herniation of the abdominal viscera more than three-quarters of the way to the apex of the pleural cavity, while it is quite common in the more usual type hernia in this location without a sac to permit viscera to completely fill the thoracic cavity of the affected side.

The displaced abdominal viscera which have been noted in reported cases include every organ in the abdomen, the structures of the pelvic cavity being the only ones never recorded within the chest in one case or another. The organs most usually noted include the stomach, spleen, small bowel, a portion of the colon and liver with the side of involvement determining to a significant extent the frequency with which all or a portion of these structures are noted.

CLINICAL FINDINGS

The dramatic symptoms and signs which characterize the posterolateral congenital diaphragmatic herniae spring from compression of the lung on the affected side and displacement of the mediastinal structures, including the heart and great vessels, by the large volume of abdominal viscera occupying the right or left pleural cavity. Cyanosis and dyspnea are cardinal symptoms of the severe alterations in cardiorespiratory physiology. Although vomiting may occur early, this is usually noted only in cases which have survived the severe intrathoracic disturbances for a sufficient period to develop partial or complete intestinal obstruction. The incidence of obstruction in congenital diaphragmatic herniae, according to Hedbloom [11] in his analysis of 37 cases was 29 per cent. How often obstruction occurred specifically in defects of the posterolateral type was not stated. Needless to say, the mortality rate in those with obstruction is much higher than in those without obstruction.[11, 12] It has been pointed out by Carter and Giuseffi [13] that obstruction in this type of congenital hernia is rare when compared with the high incidence of this complication among traumatic diaphragmatic herniae of adults. It is the feeling of these authors that the relatively large opening in the congenital defects permits easy ingress and egress of abdominal structures without complete compression of the elements of the intestinal tract. In addition to this factor, the rarity of adhesions between the abdominal structures in the chest and the pleura associated with congenital defects of the diaphragm in contrast with traumatic defects associated with hemothorax is undoubtedly of importance in explaining this relative infrequency of intestinal obstruction among the congenital herniae. Anorexia and a failure to gain weight are common symptoms reported in cases which have survived long enough for these observations to be made.

Physical examination usually reveals an acutely ill, cyanotic child with a rapid pulse and quick labored respiration. The

temperature may be significantly elevated when secondary pneumonitis is present. There is prominent movement of but one side of the chest. The abdomen is flat, or even sunken, in appearance. Palpation of the chest reveals displacement of the heart and trachea to the unaffected side. Percussion of the affected side of the chest may elicit a dull or tympanitic note depending on the viscera which have been displaced into the thorax. Auscultation reveals diminished or absent breath sounds, and may reveal the presence of intestinal sounds in the axilla or apex of the pleural cavity on the affected side. As pointed out by Sanford:[14] "Dextrocardia and a weak cry in a newborn infant should always be regarded with suspicion". Such findings on x-ray are diagnostic, and this means of establishing a diagnosis should be employed promptly in every newborn infant presenting *any type* of respiratory distress. It is stated by some that the atelectasis present in the newborn infant lung which is not totally expanded before forty-eight hours after birth may make radiologic diagnosis difficult. While this may be true in some cases, it must be rare. One must realize that the lung is collapsed to various degrees in most cases presenting congenital diaphragmatic hernia regardless of age, and that the diagnosis is established by the presence of shadows of intestinal viscera which are recognizable on x-ray within the first few hours of life being present in the chest, and not on a basis of pulmonary collapse. In support of this feeling, our second case was noted to have respiratory distress shortly after birth, and was examined radiologically promptly by the physician in charge (Fig. 2). The diagnosis was immediately established and successful surgery completed within twelve hours of delivery. *The importance of a total abdomen and chest x-ray of every infant presenting evidence of respiratory distress within the first few days of birth cannot be over-emphasized.* In cases where findings are questionable and the use of opaque media is desirable to unequivocally establish the presence or absence of portions of the intestinal tract within the chest, it is recommended that lipiodol be employed as a safe and satisfactory media; barium should be avoided because of the danger of vomiting with aspiration of this material into the tracheobronchial tree and lung. The differential diagnosis of translucent shadows on x-rays in dyspneic infants must include, aside from congenital diaphragmatic hernia, congenital lung cysts, pneumatoceles secondary to staphylococcic pneumonia, tension pneumothorax, and congenital lobar emphysema.

Figure 2.—Roentgenogram of Case No. 2, approximately nine hours after birth.

TREATMENT

Once the diagnosis is established there is nothing to gain and much to lose by any significant postponement of surgical intervention. When surgery can be carried out during the first forty-eight hours after birth, the surgeon has the advantage of a nondistended intestinal tract, facilitating not only its removal from the thorax, but its replacement into the abdominal

cavity. In cases which are older, decompression of the stomach and upper intestinal tract by gastric siphonage, hydration, antibiotic therapy and oxygen may be valuable preoperative measures. Such procedures can be instituted for a brief period of time prior to surgery and continued during surgery but *must not be employed with any idea of producing marked improvement in an acutely and gravely ill child before surgical correction of the defect is carried out.* The altered cardiorespiratory mechanics, with the resultant anoxia so poorly tolerated by the newborn, may be lessened but is not eradicated by any measure other than surgical removal of the abdominal structures from the chest. Accordingly, preparation of the patient should be expedited and the operative procedure carried out without delay. The anesthetic of choice is cyclopropane administered through a closed system with a tightly fitted mask or endotracheal tube. This permits positive pressure anesthesia with a high concentration of oxygen.

The incisions employed most commonly include the vertical paramedian, subcostal, and transverse upper abdominal. The transthoracic approach so helpful in adults presenting acquired diaphragmatic herniae is undesirable in infants because of the possible coexistence of associated intra-abdominal anomalies which may be missed by such an approach, as well as because of the difficulty encountered in reducing the abdominal structures through the defect from the thoracic side into an undeveloped abdominal cavity.[7, 15] A transverse upper abdominal incision has been employed in the two cases upon whom we have operated because it was felt that this would make a pouch of the lower abdomen to receive the abdominal structures after repair of the diaphragmatic defect and afford a wound which would be less likely to disrupt as a result of crying and straining on the part of the infant, or as a result of intestinal distention which occurs commonly for the first several days following surgery. The author gives the transverse incision considerable credit for the ease of surgical approach and closure, as well as the smooth postoperative course in his two cases. In rare instances, particularly on the right side, a combined abdominothoracic approach may be useful.

After the abdominal cavity has been opened, attention should be directed immediately to the reduction of the displaced viscera from the thoracic cavity. Any inspection or exploration for possible associated anomalies should be reserved for a later stage of the procedure, removal of the abdominal structures from the chest with the repair of the diaphragmatic defect and reexpansion of the collapsed lung being the primary interest of the surgeon during this phase of the operation. The defect is noted, and a Robinson catheter introduced through it into the pleural cavity to allow air to pass freely into the chest cavity as the abdominal structures are withdrawn. The negative pressure in the chest may be such as to make removal of the viscera very difficult without the use of a catheter in this manner. In contradistinction the suction of the cavity can be nullified and the viscera removed much more easily and with less trauma when a catheter is inserted into the pleural cavity so as to allow the ingress of air as the contents are delivered into the abdominal cavity. As the small bowel and colon are carefully drawn from the chest, they are carried through the abdominal wound and placed on the anterior abdominal wall where they are protected by moist gauze pads. When all structures have been removed, the opening in the diaphragm is surveyed and repaired. As pointed out previously, the defect is usually correctible by suture approximation of its edges. In our first case, the posterior fold was very small, but was visible during phases of diaphragmatic contraction. Accordingly, the operator should have good illumination and examine the posterior thoracic abdominal wall carefully during the various phases of inspiration and expiration so as to see the presence or absence of this posterior fold. In our second case, the fold could not be visualized during respiratory movements. In both cases, the anterior fold was

free and actually deflected upward into the chest along the medial and anterior aspect of the displaced abdominal structures. Thus, when these viscera had been removed, this fold fell into position like a curtain to convert a sizable defect into one not nearly so formidable. This was our experience in two cases. The edges of the foramen are incised for the entire circumference of the defect to separate pleura from peritoneum and to bare the muscular substance of the diaphragm. Mattress sutures of cotton are then employed to approximate the edges of the defect and finally the peritoneum drawn together with a row of interrupted cotton sutures. The catheter which has been previously employed to admit air into the pleural cavity during retraction of the abdominal structures is replaced into the chest before the last mattress suture is placed, and the pleural cavity aspirated to create a negative pressure within it before withdrawal of the tube and tying of the last suture. During this aspiration the anesthetist is asked to administer gentle positive pressure to aid in inflating the collapsed lung and expressing air from the pleural cavity. With the completion of the peritoneal sutures referred to above, the repair of the diaphragmatic defect is completed. It will usually be noted immediately that the patient's general condition is considerably improved and that the cyanotic color is greatly reduced. Crushing of the phrenic nerve before or after repair is avoided. An active diaphragm aids materially in expanding the compressed lung and correcting promptly the altered physiology which threatens the infant's life.

In regard to the correction of more massive defects, numerous techniques have been recommended which should be mentioned here. Weinberg,[16] and later Arnheim,[5] have used the renal fascia to bridge the defect between the posterior and anterior folds of the imperfectly developed diaphragm.

Donovan[2] approximates the existing anteromedial diaphragmatic fold to the chest wall by applying mattress sutures and passing these completely through the posterolateral chest wall to be tied externally. Bird[17] divides the ribs, and Harrington[10] resects ribs extrapleurally as an aid in mobilizing the chest wall toward the existing anteromedial rim of diaphragm in large defects to permit suture. Belsey and Apley[18] have freed the existing rim of diaphragmatic tissue from the thoracic wall attachments, leaving only the mediastinal attachments intact for nerve and blood supply. The defect is then repaired and the periphery of the diaphragm which has been detached is then reattached to the thoracic wall two interspaces higher than the previous normal level of attachment. In cases presenting sacs, the sac has been plicated and used as material for repair of the defect.[5, 19-22] Geever and Merendino[23] have reported successful use of the cutis grafts in experimental animals in the repair of artificially created massive defects of the diaphragm. Tantalum mesh has been recommended as a means of closing defects not amenable to other suture closures. It is apparent that the surgeon must be resourceful and imaginative when dealing with these defects. It may be noted that Hedbloom[11] included in his report two cases in which the defects defied repair because each involved total absence. One of these children lived to die at one year of age, the other at eight years of age.

After the defect in the diaphragm has been dealt with, a silver clip may be placed in the center of the suture line for future radiologic reference.[24] Structures are then surveyed for associated anomalies and replaced into the peritoneal cavity if no further abdominal surgery is required. This replacement may be attended by difficulty in the newborn or young infant because of the small capacity of the peritoneal cavity and is particularly a problem when the intestinal tract is distended. If replacement can be effected, layer suture of the abdominal wall is carried out. It may be noted that Dorsey[25] has reported the use of manual stretching of the abdominal wall in a four year old child in order to replace the viscera into

the peritoneal cavity. Although this procedure does not sound appealing to the author, there are instances in surgery when compromises in delicate technique have to be made and at least in Dorsey's case, the procedure was considered by him to be of value. Donovan,[2] and Ladd and Gross [7] have recommended undercutting the skin and subcutaneous fat in instances in which closure cannot be effected otherwise and closing simply the skin over the protruding abdominal viscera. A week or so later, when the patient's general condition is improved and distention is not present, the abdominal hernia is repaired. In the author's two cases, despite the small size of the abdominal cavity in each instance, and the variation in ages (one case 3½ months, and the other 11 hours old), it was not considered difficult to return the structures to the abdominal cavity with the use of the transverse incision. It was felt, as stated previously, that this incision in the left upper abdomen created a pouch of the lower abdomen into which the viscera could be placed and was responsible for lessening the difficulty which might have been greater had a vertical incision been employed.

After the wound has been closed and dressed, employing elastoplast instead of conventional adhesives so as to allow for abdominal distention without producing upward pressure on the repaired diaphragm, the patient is placed in a head down position and allowed to react. A suction is kept on hand for clearing the tracheobronchial tree of secretions or of material which may be aspirated if vomiting occurs.

Oxygen is administered continually from the immediate postoperative period through the first several days following surgery. As pointed out by Harrington,[10] an x-ray should be made before the patient leaves the operating room. Such a film can be of invaluable assistance in interpretation of films made a few days postoperatively. Kuchlan [24] has recorded a case of traumatic hernia in which such a procedure might have averted unnecessary reexploration. An early postoperative complication had occurred, and the films were misinterpreted, revealing what was thought to be a recurrence of the hernia. The same problem could occur, of course, in congenital diaphragmatic hernia. During the postoperative period, in addition to the administration of oxygen, careful attention must be given to combating distention, which can be considerable. The pediatrician working in conjunction with the surgeon aids materially in the administration of fluids and blood, and in the regulation of the formula or diet as these are tolerated and indicated.

CASE REPORTS

The report of the following two cases exemplifies the problems referred to in the presentation.

Case No. 1—C. H. — Was an apparently normal 6 pound, 12 ounce female child at birth. There was no neonatal distress, and her progress seemed normal during the first three weeks of life. From 3 weeks of age until 3½ months of age she had a persistent cough, slight respiratory distress, noisy breathing, and fairly frequent episodes of "colic". She did gain adequately, and was given the usual milk and solid foods for her age. She was under treatment for "bronchitis" off and on from 1 month to 3½ months of age. Several antibiotics, plus cough syrups and vapor tents were prescribed by the family physician. These treatments were on the basis of home or office visits. No x-rays were taken. Her respiratory situation became gradually more severe, with a particularly bad spell when she was 3½ months of age. At this time she was first seen in consultation by a pediatrician. Her breathing was very noisy, she could be heard across the room. She was sitting up, experiencing considerable respiratory distress, coughing sporadically, and her temperature was elevated. Physical examination showed primarily a fairly clear right chest with some bubbly rhonchi. The left chest gave evidence of less air entering, the bubbling was more marked, and there were bursts of tinkling sounds unrelated to respiration. The child was subjected to quick fluoroscopic examination which showed considerable foreign shadow in the left chest, the shadow displaying peristaltic movement. Opaque media was given by mouth, and when the bolus arrived in the left chest the child was sent to St. Patrick's Hospital. The author was called to see this child in consultation at this time. After a brief period of observation, surgery was performed, and a posterolateral defect in the diaphragm was found and repaired after careful removal of the abdominal viscera from the left hemithorax. There were no other anom-

alies. The patient's postoperative course was uncomplicated, and she was discharged on the eighth postoperative day. She has remained well ever since, and Fig. 3 shows this child at 1½

Figure 3.—Case No. 1 at age 1½ years.

years of age. She is now 5 years old, and is a perfectly normal child in every respect. Her x-rays at 5 years of age are seen in Figs. 4 and 5, before and after the ingestion of barium, respectively.

Case No. 2—D. D. — A newborn infant boy, the son of an airman, was seen by the author at the Lake Charles Air Force Base Hospital at the request of the Medical Officer in charge of this case, approximately ten hours after delivery. Because of respiratory distress, cyanosis and regurgitation, x-rays of the chest had been made and intestinal shadows noted to fill the left hemithorax (Fig. 2). The author was consulted at this time. A catheter was passed into the stomach and lipiodol introduced under a fluoroscope, revealing the stomach and bowel in the left chest. Surgery was performed immediately, and a left posterolateral defect in the diaphragm repaired after removal of the abdominal viscera from the left chest. The postoperative course

Figure 4.—AP roentgenogram of Case No. 1 at age 5 years before ingestion of barium.

Figure 5.—Lateral roentgenogram of Case No. 1 at age 5 years after ingestion of barium.

was uncomplicated, and the baby was discharged from the hospital on the twelfth postoperative day. When last seen at age of 2 months he was found to be in excellent condition, weighing 16½ pounds. An x-ray of this child at that time is presented in Fig. 6. Further follow-up has been

Figure 6.—Roentgenogram of Case No. 2 at two months of age.

impossible to date because of the transfer of his parents from this air base. Because of the critical condition of this infant prior to surgery, administration of oxygen was required even during transfer to the operating room. The surgery was performed when he was 11 hours old. There were no other anomalies.

SUMMARY

1. The fact that congenital diaphragmatic hernia of the posterolateral type requires immediate surgery to achieve the lowest possible mortality rate has been well established, and is simply re-emphasized in this paper.

2. Further improvement in the management of this condition depends on recognition of a larger percentage of cases prior to death.

3. The free use of x-ray of the chest and abdomen in all infants presenting any type of respiratory difficulties in the first few days of life can be of invaluable assistance in attaining this end.

4. Two cases, one of which was 11 hours old at the time of surgery, both successfully restored to normal, are briefly presented to demonstrate the clinical aspects of the condition, and the gratifying results achieved by prompt surgical correction of these defects.

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RESPONSE OF TUBERCULOSIS TO INTENSIVE COMBINED FOUR DRUG THERAPY

ENDEL KASK, M. D. †
NEW YORK, N. Y.

There is already enough evidence to indicate that even the most recent additions to our therapeutic weapons against tuberculosis available, i.e., pyrazinoic acid (pyrazinamide, aldinamide) and cycloserine (seromycin), do not constitute any remarkable progress, if any, in attempts to find a cure for tuberculosis. Furthermore, one of these new additions (pyrazinoic acid amide) is stated even by its manufacturers to be too toxic to be administered to patients other than those in whom other treatments have proved ineffective, or as a short course in connection with surgical treatment.

While it is true that significantly fewer patients die of tuberculosis nowadays, in all likelihood because of modern drug therapy, it is equally true that in spite of the same modern therapy, including surgical procedures, the number of tuberculous patients has not changed significantly, if not actually increased. Tuberculosis is still regarded, with justification, as a disease whose victim is condemned to chronic invalidism, frequently life-long, an essential part of which is usually spent by the patients as a dreary sequence of almost endless, prison-like hospitalizations. Many of these hospitalizations still mean confinements for life, with no reasonable hope of escape, all available drugs having been tried and found ineffective in such cases, except that they keep the patients alive, thus forcing some of the patients to accept the situation with resignation, while others develop a more marked reactive mental degeneration.

† Formerly Resident at Willard Parker Hospital, New York. At present Resident in Medicine at Metropolitan Hospital, New York City.

Even more deplorable is the fact that most physicians in charge of these "hopeless" cases have accepted the hopelessness and make their therapeutic plans in accordance with the prospect of having to deal with incurable or relapsing patients indefinitely or until they die. Such an attitude is clearly manifested also by the therapeutic recommendations of standard textbooks and other sources of authority —it is a widely accepted and advised policy to withhold one or more drugs in the treatment of tuberculosis in order to be able to administer such initially withheld drugs later during the many months and years to come when the drug or drugs initially started have failed. This means that the patient's treatment is started with considerable likelihood in mind that he will not recover.

The writer was in charge of many seemingly "incurable" tuberculous patients at Willard Hospital in New York City. July 1954 to September 1955, and was unable to accept the policy of indefinite hospitalizations and the therapeutic measures planned with countless years of incurability in mind. He calculated that in order to effect cure and eradication of the tuberculosis bacilli, a combined and hardest possible blow should be tried as persistently as possible.

Combinations of three antituberculous drugs (para-aminosalicylate, isoniazid, streptomycin) have been relatively extensively tried previously and reported to have no clear-cut advantage over combinations of only two of the drugs mentioned. However, it is striking to learn that such three-drug combinations have been used with little persistency and often in inadequate dosages. Also, it is remarkable that the very same authorities who feel that three-drug combinations are no better than two-drug combinations still unhesitatingly recommend and order heavy doses of the three or more drugs in combination to be given to critically ill patients, including several grams of streptomycin daily, in spite of the allegedly proved fact that 1 gram of streptomycin twice or three times weekly is thought to be just

as effective against tuberculosis as higher dosages. In critical conditions there appears to be considerable doubt about the "proof" otherwise accepted.

STREPTOMYCIN AND DIHYDROSTREPTOMYCIN

This together with a preexisting feeling in the writer's mind that the efficacy of a twice-weekly administration of a drug that is excreted or destroyed within a few hours could not be sensibly accepted as equal to more frequent administrations convinced the writer that streptomycin should be given at least once daily to all tuberculous patients in an attempt to eradicate the infection, since a mild case could also become resistant during inadequate treatment. More frequent administrations of streptomycin in large doses, even if desirable for the treatment of tuberculosis, knowingly involve the risk of serious toxicity, and consequently a limit has to be set. It has been well demonstrated that combinations of streptomycin and dihydrostreptomycin are considerably less toxic to the eighth nerve than either of these two drugs alone given in dosage equal to the combined amount of the two. At the same time, there is no evidence that the combination is less effective against tuberculosis because of the fact that each of the two drugs in combination is given in only half the dosage in which it would be necessary to give any of the two if given without the other. It is known that they work synergistically against the tuberculosis bacillus, and it has been thought that they are identical in their manner of antituberculous action. There have been some indications, however, that one of the two drugs may still inhibit the tuberculosis bacilli that are proved to be resistant to the other. In the light of such indications the combination of streptomycin and dihydrostreptomycin may have even a wider therapeutic importance than the generally known lesser toxicity. From previous experience it would appear that half a gram of each daily would be of reasonably low toxicity and at the same time not unreasonable as therapeutic agents against tuberculosis. During the study reported in this paper it was experienced that such a combined dosage did not cause any clinically detectable deafness or vestibular disturbance even after several months of continuous administration.

ISONIAZID

The dosage of isoniazid was set by the author at 150 mg. three times daily for patients below 150 pounds, and 200 mg. three times daily for patients above 150 pounds. Not a single case of toxic reactions or side effects attributable to isoniazid was encountered in the 41 patients reported on here, during continuous medication ranging up to six and one half months. It is questionable how much of this absence of toxic effects can be attributed to the 0.167 mg. of pyridoxin that was given daily in the multivitamin preparation to each patient during most of the study.

PARA-AMINOSALICYLIC ACID

Para-aminosalicylate (sodium salt) was given in dosages of 4 to 5 grams three times daily, without regard to the patient's weight. The 4 gram doses were given during the first half of the study, but the dosage was then increased to 5 grams three times daily in all patients, except in those who had apparently already become inactive on the 4 gram dosage. Accordingly, some patients received only 12 grams of para-aminosalicylate daily throughout their hospital treatment (in addition to the three or two other drugs mentioned above), while others received 15 grams daily throughout their treatment, and an intermediate group received 12 grams daily first, and then 15 grams daily.

No attempt is made to evaluate the relative value of these dosages, but in several cases there was a clinical impression that the increase of the dosage from 12 to 15 grams daily caused a more marked turning point in the improvement, in that the fever, symptoms, and sputum decreased or disappeared remarkably within a few days. Another observance worthy of note was that no insuperable difficulties in the administration of para-aminosalicylate in tablet form were encountered in

any of the 41 patients, despite the fact that several of the patients had been regarded as totally incapable of taking para-aminosalicylate because of gastrointestinal intolerance observed in connection with the several attempts to administer the drug during the patients' preceding stay at the hospital for months or years. When these patients were firmly told that they had to take the drug and keep it down in the face of the very serious character of their disease a few initial vomitings were all that disturbed the schedule.

METHOD OF TREATMENT

In the study reported here all four drugs (streptomycin, dihydrostreptomycin, isoniazid and sodium para-aminosalicylate) were started simultaneously in the dosage given above, as soon as the diagnosis of active tuberculosis (pulmonary in all patients) was ascertained in practically all cases by finding typical acid-fast bacilli in sputum or gastric contents, and by seeing the x-ray films of the lungs. In only one case was the diagnosis made without finding acid-fast bacilli. This occurred in a young female with a typical pleural effusion and clinical course, the cytology and chemistry of the pleural fluid also supporting the diagnosis of tuberculosis.

The study, that was started in January 1955 at Willard Parker Hospital, was intended to embrace hundreds of patients, with a follow-up period of up to two years or perhaps more. Unfortunately, the current policy of the New York City hospital authorities to close the city's tuberculosis and contagious disease hospitals unexpectedly hit Willard Parker Hospital in September 1955, first of all putting an end to the chest service there and thus also putting a sudden end to the investigation that had been encouraging.

Therefore, only 41 patients could be given the combination treatment with the four drugs mentioned over a reasonable period of time to enable any evaluation of the efficacy of the combination to be made. In spite of this relative inadequacy in the number of patients and in the length of observation it is felt by the author that this report should be of value in encouraging other physicians who have the necessary patient material to carry on further investigations along similar lines —trying to effect cure of tuberculosis by intensive and persistent treatment from the very beginning, particularly since such inciting reports are deplorably few in the literature on such a tragic disease as tuberculosis.

A study concerning the efficacy of four antituberculous drugs combined should be of interest also historically since it seems to be difficult, if not impossible, to find reports in the literature describing employment of four antituberculous drugs simultaneously.

The full-dosage combination of the four drugs was given to each patient for an initial period of at least one month. When there was clearcut evidence of clinical disappearance of symptoms, x-ray improvement and, in most instances, disappearance of the acid-fast bacilli from patient's sputum smear or from the gastric contents (which were obtained monthly on three consecutive days if the amount of sputum was unsatisfactory for examination) dihidrostreptomycin was discontinued and streptomycin decreased to 1 gram three times weekly. The dosages of isoniazid and para-aminosalicylate being unchanged, this three-drug therapy was then continued to a total of up to six and one-half months, counted from the beginning of the four-drug treatment. In no case was the simultaneous four-drug treatment with daily injections of streptomycin and dihydrostreptomycin given longer than four months, for a prolongation of such treatment would have meant a self-defeat of the purpose of the study, i.e., a more rapid cure or significant improvement of the tuberculous patient than had been possible with other forms of treatment. If and when it happened that the patient failed to show definite improvement after these initial four months (in two cases even before the four months were over) pyrazinoic acid amide in combination with isoniazid and para-aminosalicylate or tetracycline was started. Actually, there

never was any complete lack of improvement, as manifested clinically on x-ray films and the decrease of sputum and less easy finding of acid-fast bacilli, during simultaneous administration of the four drugs for a maximum period of four months. This was true even in the patients who had previously failed to show any improvement for months or years or who had actually become worse during a less intensive treatment or with treatment with two or three of the drugs in various combinations. However, a moderate or slight improvement was not considered satisfactory since it did not lead to the patients' escape to more normal living conditions.

No selection was made among the patients available before they were started on the four simultaneous drugs. The only requirement was that they should have active tuberculosis. Thus, a few of the patients were very mild cases; whereas others were critically ill, with extensive bilateral involvement of the lungs.

RESULTS

Sixteen patients had never received drug treatment for their tuberculosis longer than for two weeks prior to the onset of the four-drug treatment. All of these patients, with one exception, lost the symptoms of their tuberculosis within at most two and one-half months of the four-drug treatment, and acid-fast bacilli could no longer be found in their sputum (if produced in an exceptional case) or gastric contents, and they rapidly returned to their normal body weights or exceeded it, and felt subjectively perfectly healthy.

The one exception was a 28-year-old Negro female with severe sickle cell anemia, in prolonged sickle cell crisis with icterus for several weeks during the treatment, who often vomited her meals and together with these probably much of her medications. Her improvement was very slow during the three and one-half months of the four-drug treatment, and her sputum continued to contain acid-fast bacilli until she was transferred to another hospital after the three and one-half months, in connection with closing of Willard Parker Hospital chest service. Her sickle cell activity never disappeared, and she still had a slight jaundice at the time of transfer to the other hospital. Her erythrocyte sedimentation rate was normal or less than average, in spite of her very extensive bilateral, active tuberculosis, with copious sputum loaded with tuberculosis bacilli.

In 15 other cases, cavities, if present in the beginning of the four-drug treatment, disappeared (as judged on tomograms) during the treatment, and all that could be observed on their x-ray films were apparent fibrous or sclerotic rests of their disease processes, while the initially small lesions became completely invisible. The drug treatment preceding the onset of four-drug treatment consisted usually of isoniazid and dihydrostreptomycin in various dosages for two weeks at the referring hospitals, but in 10 cases no treatment whatever had been given prior to the sudden onset of four-drug treatment as soon as the diagnosis was clear. All of these 10 patients became asymptomatic within a few weeks of the onset of the treatment and their sputums disappeared, only the first one or two specimens being found to contain acid-fast bacilli. Gastric contents that were subsequently obtained during a follow-up period of up to six months failed to show any growth of acid-fast bacilli. The x-ray films showed a corresponding disappearance of the pulmonary activity, and the erythrocyte sedimentation rates returned to normal in the majority of the cases.

Two further patients had had twenty days of drug treatment preceding the start of the four-drug treatment and a third one twenty-two days of such preceding treatment. These 3 patients showed practically the same degree of improvement as described in the preceding paragraph. The four-drug treatment in these 3 cases was no longer than two months in two cases and one month in one case, all patients becoming subjectively perfectly healthy during such short treatment. The big left upper lobe cavity that was present in one of the patients disappeared

completely during the treatment.

A fourth patient who had been given drug treatment for a month before onset of four-drug treatment, during a part of this one month receiving three drugs (isoniazid, streptomycin, para-aminosalicylate), showed less rapid clearing of his extensive bilateral tuberculosis after onset of the four-drug therapy (no noticeable clearing before such onset). Otherwise sputum disappearance, gastric negativity for acid-fast bacilli and subjectively healthy feeling were noted, as in the preceding three patients.

A fifth patient, the young female with pleural effusion, had also received drug treatment with isoniazid and streptomycin for one month prior to onset of the four combined drugs and had still a sizable pleural effusion after the month of such initial treatment. About three weeks after the onset of the four drugs simultaneously no definite fluid could be discerned, the patient having become otherwise healthy earlier.

A sixth patient also had received drug treatment for only a month prior to the inclusion in the present study. However, in contrast with the others already described, diagnosis of his pulmonary tuberculosis had been established fifty-eight months prior to the onset of the drug treatment and he had previously been treated on prolonged bed rest. With the exception of less rapid x-ray clearance he showed approximately the same rapid improvement on four-drug treatment as the preceding patients. In the previously described patients the diagnosis had been made within at most two and one-half months prior to the start of the combined four drugs.

A seventh patient had been given drug treatment for one month and ten days before the four drugs were started. In spite of simultaneous administration of isoniazid and streptomycin during this one month and ten days, (the streptomycin having been given a gram daily for a few weeks), he remained critically ill, with temperature ranging to 103 F. degrees, marked tachycardia, prostration, copious sputum and extreme emaciation. When the treatment was intensified to the four drugs with the daily injections and dosages described earlier in this paper there was an initial difficulty in administering because of gastrointestinal symptoms, and the paucity of the muscular tissue. These initial difficulties were surmounted with some persistency, and within less than two months after the onset of the intensified treatment patient refused to stay in bed and insisted in being discharged because he believed himself to be cured. His last sputum containing acid-fast bacilli on examination occurred at the end of two months of the intensive four-drug treatment. The x-ray that had failed to show any definitely intact lung tissue at the onset of the four combined drugs revealed clearing of the lower lungs at the end of the two months of intensified treatment, creation of large air spaces occupying the locations of upper lobes, and cyst-like formations in the mid-lung fields, without the character of tuberculous cavities.

Another patient, a 25-year-old Negro female with complete consolidation and cavitation of one entire lung and involvement of the contralateral upper lung and severe toxicity and hyperpyrexia, who received combined two-drug therapy for one and one-half months without any apparent improvement before the four simultaneous drugs were started failed to show remarkable improvement also during the four-drug treatment, although definite improvement in her general well-being occurred during the two and one-half months of four-drug treatment. It is quite possible that she had an empyema or a non-specific lung abscess in addition to her extensive pulmonary tuberculosis, but this could never be proved before she was transferred to another hospital for the reason mentioned above.

The two patients who had received previous two-drug therapy for two and one-fourth or two and one-half months immediately before being included in this study also became clinically and bacteriologically healthy during the one and one-

fourth to two months of four-drug treatment. One of them showed complete clearing of the lung lesion on the x-ray while the other showed gradual calcification and sharp decrease and delimitation of the universally scattered and confluent lesions and cavitations present in both lungs at the onset of the four drugs combined.

The remaining patients, 15 in number, had received combined two-drug treatment for at least four and one-half months preceding the onset of four-drug therapy, most of them considerably longer than four and one-half months, with relapses occurring before. The minimum four and one-half months mentioned here is the minimum drug treatment *immediately* preceding the combined four drugs. One patient had received continuous drug therapy for five years prior to onset of the four-drug treatment. As mentioned above, however, all patients had bacteriologically proved activity of their tuberculosis at the time the simultaneous four drugs were started. Eight of these 15 patients with long preceding treatment without result were converted to sputum or gastric negativity for acid-fast bacilli during the intensive four-drug treatment. Duration of treatment was less than four months in all cases, mostly between two and three months, and there was definite x-ray and clinical improvement during the intensive treatment, and all of the 8 patients became subjectively healthy. Some of them had residual cavities visible on the x-ray films. In each there was a question whether these cavities actually represented so-called sclero-cystic cavitations or air spaces without active disease in their walls or surroundings, as described in the literature, since there was no x-ray evidence of activity surrounding these cavities. It is again deplorable that further observation was made impossible but these initial results should be sufficiently encouraging to other chest physicians.

Of the 7 remaining patients who failed to become bacteriologically negative for acid-fast bacilli during the four-drug treatment, 5 acquired such a sharply limited disease in their lungs that they could be considered as candidates for successful surgical resection, just before they were transferred to other hospitals. Their general condition had also improved sufficiently to make them good surgical risks.

There remain two most chronically and apparently hopelessly ill patients who could not be brought into operable condition during the four-month intensive four-drug treatment. They both had extensive bilateral cavitation and chronic toxicity. One of them, a diabetic, had been treated previously for five years at the same hospital, and the other was practically a skeleton and had been treated for one and one-half years unimproved in this condition. In both cases viomycin had also been tried without effect in addition to combinations of isoniazid and streptomycin in conventionally approved dosages. However, after they had been given the trial of combined four drugs in dosages as described earlier in this paper, in the nondiabetic, greatly emaciated patient for two months and five days, and in the diabetic patient for four months, there was no doubt that for the first time during their long and severe illness there was both a clinical and x-ray improvement. The previous follow-up films had only shown gradual spread of the disease process, or at the best a stationary condition for months. Both of these patients had been considered as totally incapable of taking even small doses of para-aminosalicylate, as shown by several unsuccessful attempts during their long hospitalizations, but both were finally able to take 5 grams of para-aminosalicylate three times daily without side effects. It is quite conceivable that if there had been an opportunity to continue the intensive four-drug treatment longer, although relatively much shorter than the confinement for life (at least in one of the cases) understood in their cases the success could have been sufficient to make these patients at least operable. One of these patients was actually expected to die at any time just prior to the onset of the four-drug treatment, so that her case was apparently the only occasion in which the four-drug

treatment actually prolonged hospital confinement, in prolonging her life. A prolongation of confinement in this sense will, however, most likely be considered as encouraging by the medical profession and others.

Finally, although not subject to any evaluation, it may be worthy of mention that an impression was gained that a more regular administration of the three doses of isoniazid and para-aminosalicylate during the twenty-four hour period seemed to accelerate the improvement more markedly than the common and routine "t.i.d." administration that means that the three doses are given with at most four hours' intervals during daylight hours, thus leaving at least sixteen hours without medications.

SUMMARY

In this paper initial encouraging results obtained by administration of four anti-tuberculous drugs (streptomycin, dihydrostreptomycin, isoniazid and sodium para-aminosalicylate) in relatively high dosages and simultaneously are reported. There were no complete failures among the 41 patients subjected to the treatment and study, although 4 patients were not considered satisfactorily improved from the standpoint of quite strict requirements of this paper, i.e., sufficient improvement in order to be able to discharge the tuberculous patient bacteriologically negative, subjectively healthy and inactive as determined by other means, after *less* than six months in *all* cases. The special circumstances in the four apparently resistant cases are described, and it is pointed out that at least 2 of these 4 patients, who were considered definitely hopeless on the approved two-drug or even three-drug treatment in conventional dosages, showed their first improvement during the four-drug treatment.

It is mentioned in the paper that because of the closing of the hospital where this study was conducted a sufficient follow-up could not be undertaken, but the preliminary results are considered sufficiently favorable and indicative of progress in the treatment of tuberculosis in order to justify publication of this paper.

It is gratifying to read in a recent article [1] that another clinical investigator has come to the conclusion that three-drug combination, rather than two-drug treatment, from the beginning is the choice in tuberculosis, but the present paper goes further and suggests four drugs in combination from the start.

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A RIGHT ANGLE RETRACTOR FOR SMALL INCISIONS

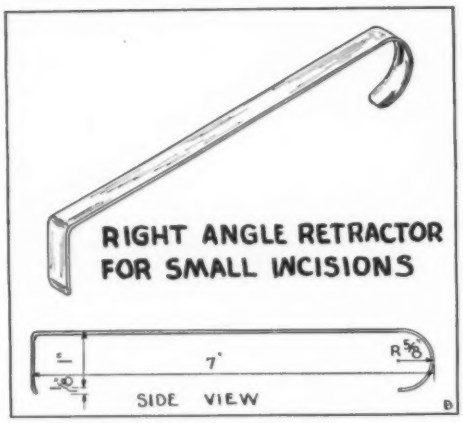
EVERETT L. DREWES, M. D.
NEW ORLEANS

The need for a retractor convenient to use in smaller incisions and to facilitate entry into the abdominal cavity through moderate sized McBurney incisions has been realized for some time.

When using the regular Parker retractors in McBurney incisions, force must often be used to push them through the muscle. This often traumatizes the muscle unnecessarily and may damage the blades of the Mayo scissors used to split the muscle. A retractor with a thin flat blade at one end can both separate and retract the muscle and the straight flat blade is easily inserted between the blades of the scissors. When the operator enters the peritoneal cavity the reverse is true—a curved blade is more efficient to retract the tissues.

A retractor was designed for use in the above situation with a straight blade on one end. This blade was at a right angle to the main body of the retractor which is used to grasp the instrument. On the other end a curved blade of one hundred eighty degrees of arc was made.

The most convenient length instrument was seven inches long, the blades were three eights by one inch. The thickness of the metal, either chrome plated spring brass or stainless steel, was three sixty-fourths of an inch to give the desired rigidity.



The retractors can be made in different widths to satisfy the needs of different operators. The narrow retractors three sixteenth or one fourth inch in width have been found to be very useful and are used regularly in tracheotomies. The wider retractors have become routine instruments on trays set for thyroidectomies.

The retractors illustrated and described were made by the author and have been in use for some time at Mercy Hospital.

PRESIDENT'S ADDRESS AMERICAN RHINOLOGIC SOCIETY

RALPH H. RIGGS, M. D.
SHREVEPORT

At this second annual meeting of the American Rhinologic Society it would seem appropriate to ask ourselves two questions: (1) What are our objectives and (2) how can they be realized? We have been together as a group long enough now to be thoroughly familiar with our objectives.

Our first objective is to *learn*. Surely this is the reason that the first two or three in our society were even drawn together. The story has been told so many times that it is now almost a legend amongst us. There are many things that we want to learn and must learn. We must understand the function of the nose. To do this we must know something about each part of the nose and its relation to every other part. Naturally all of this requires a knowledge of gross and microscopic anatomy, embryology, physiology, and pathology.

Then, we must realize that the nose is just a part of the body as a whole. We want to learn more about how it affects every other part of our make-up, including the psychologic and subconscious.

Diagnosis is not only the most difficult phase of medicine but also the most important. In the field of Rhinology we must think in terms of an anatomic, physiologic, psychologic, and even psychiatric diagnosis. Those of us who have been together with Dr. Cottle for a decade know now, better than ever how difficult it is to make a *correct* diagnosis.

We must learn procedures, not only how to use them (technique) but also when, for until we learn the indications of rhinologic procedures, we really have no use for any technique. Routine surgery is not one of our objectives.

We must learn order (not routine). Order in the operating room is essential. By this is meant that through cooperation with the nursing staff, the room should be ready to receive the patient. There should be quiet, no unnecessary delay in preparing the patient for the operation, and a realization that every patient is entitled to receive the best from every one.

Order is also important in the performance of the operation. There must be order in the way instruments are set up and the way in which they are used. Procedures should be dictated as they are being performed, for good records are an important part of the practice of medicine. Incidentally, rhinologic operations are not done in a routine manner but they should certainly be performed in an orderly manner. Finally, there can be no order in the operation unless the surgeon thinks in an orderly manner, and above all, has control of both himself and his patient.

Another objective of our society is to

* Presented at meeting of the American Rhinologic Society, Chicago, Illinois, at the Palmer House, October 13, 1956.

teach. This objective could well be considered along with learning, because in order to teach, one must have learned his subject well. By teaching we have been able to learn more and more.

In our teaching we must reach a large number—our fellow rhinologists, the general practitioner, residents, interns, and medical students. At present our contacts include all of these. Our fellow rhinologists are invited to our meetings and many have been in Dr. Cottle's courses. As you know, most of those in each of his courses are affiliated with a university, and by this means, residents, interns, and medical students are becoming more conscious of our specialty. This has been the direct result of the insistence of Dr. Cottle that teaching be a part of the work of our society.

In achieving our objective to teach, each of us is morally obligated to present papers before our local, regional, and national medical societies and to teach the general practitioner in our area. Our record during the past several years of the places we have been and the things we have done shows that we literally have been a teaching group or a traveling university.

Our final objective is the desire to *share* our knowledge and experience. This society was founded with a view to sharing and I predict its progress will be in direct relation to the sharing efforts of its members. We must share our knowledge, our experiences, our work, and our lives. We must know not only how to give but also how to receive, for without both, sharing is not possible.

These are our objectives and they can be realized. They will be realized when enough of us reach maturity. According to Dr. Edward A. Strecker, maturity is a quality of personality made up of a number of elements, such as reliability, persistence, endurance, independence, determination, cooperation, flexibility, tolerance, patience, adaptability, and compromise.

Basically, maturity represents a wholesome amalgamation of two things: (1) *Dissatisfaction with the status quo,* which calls forth aggressive constructive effort, and (2) social concern and devotion. Emotional maturity is the morale of the individual. I look forward with you to this day of maturity.

———o———

A SMALL TOWN GUIDANCE CENTER IN RETROSPECT

IRVIN A. KRAFT, M. D.*
NEW ORLEANS

The mental hygiene clinic program in Louisiana was initiated in 1948 by the State Hospital Board with centers established in Shreveport, Alexandria, and Baton Rouge. At the time of this writing, there are eight facilities in the program. Latitude and variations of procedure are encouraged in the different centers. There are, however, many consistent administrative and medical features, such as: diagnostic categories, statistical reporting, treatment goals, etc. In this paper the aim is to describe the development of the Calcasieu Area Guidance Center, Lake Charles, Louisiana, from September, 1951 to February, 1956, in order to demonstrate the multifaceted nature of such a guidance center in a small, expanding community.

Originally, the Guidance Center was founded by the efforts of local interested citizens including professional, business, and other persons. When the original director resigned because of the pressure of his private practice, a psychiatrist from one of the medical schools was assigned to the clinic. A psychologist and a psychiatric social worker also were newly employed, and the Center began larger operations in September, 1953.

To understand more completely the functioning of this Center, it is helpful to picture the area it was designed to serve. Lake Charles is the focus for Calcasieu, Cameron, Jefferson Davis, and Beauregard Parishes with a population approximating 200,000. Lake Charles has

* Assistant Director, Family Study Unit, Department of Psychiatry and Neurology, Tulane Medical School, New Orleans, Louisiana.

expanded from a population of 21,000 in 1940 to an estimated 48,000 in 1956. The population of the peripheral area now totals 60,000. The Air Force reactivated Lake Charles Air Force Base in 1952, and made it a permanent installation in 1955. Military personnel probably number over 5000, most of whom have families and live nearby.

Thus, Lake Charles and the surrounding areas were involved in the rapid growth of populations and industrial developments with the resulting socio-medical complications. The Guidance Center in meeting some of these needs was guided by a board of directors made up of local citizens, who functioned in an advisory capacity under the direction of the mental hygiene division of the State Hospital Board, and later the Department of Institutions. The staff consisted of a clinical psychologist, a psychiatric social worker, the psychiatrist (medical director) and a secretary. The psychiatrist, who was part-time, flew to Lake Charles weekly, spending one or two days there. Primary financial support for the Center was a State-Federal allotment, which paid the salary and fees of the personnel. Funds raised from persons in the local area through Calcasieu Area United Appeals took care of the rent, utilities, and some miscellaneous expenses.

The customary pattern of a guidance center involves a rather lengthy intake procedure, which is designed to winnow out from the people seeking help those whom the set services could aid. These cases are children with mild to moderately severe behavior disorders, mild neurotic derangements and the maladjustments of adolescence. Organic and severely disturbed children usually are referred elsewhere. Children whose parents are psychotic or very difficult to work with also may be rejected. The focus of treatment is primarily on the mother-child relationship, with the child's therapist usually being a psychiatrist or psychologist. The mother is given case work treatment by the social worker. In many instances the traditional procedures of the guidance clinic have a high ratio of personnel to case with a large amount consumed by the intake, diagnostic, and treatment procedures.

The traditional methods of a guidance center were altered to meet the multiple needs of the area and new techniques were devised. The services grouped themselves into five main categories. First, there was the customary role of a guidance center as a diagnostic and treatment facility for the emotionally disturbed child. Parents were usually involved in the therapy whenever possible. Sometimes a mother or father alone or both parents together would be seen in relationship to the child's problem. The focus of the Center always was the child and his adjustment.

The second set of functions consisted mainly of consultation service to other agencies. These were: the Department of Public Welfare, Children's Division and Public Assistance, Boys' Village, Crippled Children's Division of the State Department of Health, Public Health Nurses, and the Public Health Clinic in Lake Charles. The Center furnished psychometric evaluation for some, but the main emphasis was on the evaluation of the patient's total personality, rather than intelligence quotient alone. Data concerning the personality potential of the individual were given to the agencies. Some patients were taken into a treatment plan which was coordinated with other agencies having contact with the patient.

The third group of services could be called the community role. The Center soon became the focus of a number of activities which had been done before by various individuals. These included: commitment of psychotics to state hospitals, control and aid to ministers in their counselling role. This sometimes led to the Center's doing psychotherapy to complement the efforts of the general practitioner or minister who saw the couple initially.

A fourth category involved the education of the public, of the schools and other groups to mental health and illness.

Talks were made to the P.T.A., to nursery schools and church groups. Attempts were made to aid the school system in understanding the problems of the gifted child, the school phobic and the brain-damaged child. Discussions with teachers brought out some of the intense interpersonal aspects of the teacher-child relationships. Advice and aid to families with geriatric problems often came to the fore. In sum, the Center attempted the roles of agencies such as family service, school social workers, and a mental health society.

In the fifth grouping of functions the Center was oriented to serve the family doctor in many ways. There were the elderly patients who posed the problems of diagnosis, especially regarding organic factors. Psychological testing and social case work might uncover family and other situations which were aggravating the patient, often with a resulting psychosomatic disorder. Attempts were made to encourage group activities of the aged and to provide outlets for their unused energies and talents.

There would be occasions before surgery for one of its members when the family's turmoil and anxiety could be relieved. The pediatrician and family doctor could turn to the Center for aid in handling emotional problems of a diabetic child and his parents. Organic syndromes, such as cerebral palsy, mental deficiency, hemiplegia, postencephalitic and traumatic brain damage in children were evaluated. The families were counselled in conjunction with the plan of therapy of the family physician. In that manner the difficulties of rehabilitation were handled more satisfactorily.

Gynecologists referred sterility and frigidity problems to the Center for psychological and psyhciatric evaluations to complete their own studies. Some patients entered brief or long term therapy to adjust to the difficulty and to plan for alternatives such as adoptions. There were hospital consultations where the use of the Bender-Gestalt and other tests helped the surgeon to rule out a brain tumor and reach a diagnosis of functional disorder.

The information in the accompanying table summarizes the use made of the Guidance Center. Referral sources were consistent in their proportions. One can see here (Table 1) that the Center was ulitized heavily by the physicians of the area.

TABLE 1
REFERRAL SOURCES

September, 1953-March, 1956	1118 Applications	
	Total	Per Cent
Self (including friends, parents)	410	37
Physicians (local)	258	23
Schools (local)	214	19
Others (incl.: D.P.W., juvenile aid, religious)	236	21

The large per cent of self-referrals might reflect the many talks and appearances the staff made at community functions.

This cursory description gives some picture of the services which a guidance center can furnish the community. The Guidance Center in Lake Charles has served as a general family-medical-treatment agency. It has helped the physicians and others of the community to perform their duties more completely.

Note: Much of this material was obtained through the friendly cooperation of the staff of the Calcasieu Area Guidance Center. I wish to express my thanks to them.

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1430 Tulane Avenue

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MEDICAL ASPECTS OF MOTOR VEHICLE ACCIDENTS AND THEIR PREVENTION

In 1956, there were 40,200 fatalities resulting from traffic accidents. To help realize what these figures mean, Howard A. Rusk [1] has stated that in the first ten days after D-day the Americans lost on the beachheads of Normandy 11,000 men. During those same ten days we lost 26,000 civilians, killed and wounded, on the highways and in the industry of this country. It is estimated that for each person killed on the highways there are 35 injured, and probably 100,000 of these are permanently disabled each year. The modern passenger car is the third leading cause of death in ages 5 through 9; the second most frequent cause observed in ages 10 through 14; and the foremost cause in ages 15 through 24.

As the third most frequent cause of death nationally, motor vehicle accidents are a major public health concern, and accordingly, we, in medicine should take a certain amount of leadership in attempting the solution of this problem. Vast as the fatality is now, it is calculated that in ten years there will be a one-third increase, with the probability of 53,000 fatalities in 1966.

Realization of the dangers involved have brought engineering and related influences to progressive improvement of streets and highways with the prospect of a steady further development in this field in the ten years ahead.

In the face of the steadily increasing total of highway deaths, attention has been focused by many investigators on the motor vehicle itself — the so-called "misguided missiles." Following a paper by Fletcher D. Woodward, in 1948,[2] under the title *Medical Criticism of Modern Automotive Engineering*, changes in design and structure of automobiles have relieved some of the dangers. Detailed analysis as to what these dangers were and the circumstances of their occurrence produced some surprising facts. One car in twelve is expected to be in an accident. Over 50 per cent of the accidents take place under 40 miles an hour. Ejection from the car more than doubles the risk of moderate through fatal grades of injury. Ninety-five per cent of accident victims survive, but 24 per cent sustain moderate to fatal grades of injury. Head and facial injuries occur in approximately 75 per cent, and injuries to the lower extremities in approximately 50 per cent. In the words of one investigator, "obviously when people are hurt in cars, they are hurt all over." In successive stages of investigation attention has been given to the

matter of reducing the dangers of the steering wheel, padding the instrument panel, providing door locks which will not allow the doors to swing open, and also, providing seat belts. It has been stated that the risk of doors' opening has been decreased by 33 per cent, and that this factor together with the effect of seat belts and the other measures mentioned, including retaining the passenger in the protective shell of the car, have reduced the risk of injury in varying circumstances as much as 60 per cent.

However desirable it is for the vehicle to be made as safe as possible, measures of this sort will not prevent accidents. It is obvious that the third element in the accident situation, the driver himself, is the most important. In some tabulations,[3] 25 per cent of the individuals involved in fatal accidents have had some ingestion of alcohol. In 1955, more than 41 per cent of the deaths and more than 35 per cent of the injuries due to motor vehicle accidents occurred on Saturdays and Sundays. Three out of four were in clear weather on dry roads. Eighty-five per cent involved in accidents were passenger cars. Twenty seven per cent of all drivers involved in fatal auto accidents in the United States in 1955 were under 25 years of age. Four to 8 P.M. are the most dangerous hours of the day to drive, and 1 out of every 75 persons in the United States became a traffic casualty in 1955.

It is obvious from such considerations as these, and certain others brought out in similar investigations that the important factor in the majority of accidents is the driver. These accidents are the result, on the one hand, of physical conditions which are susceptible of examination in a certain degree. Standards of physical fitness have been prepared. If these were adhered to by effective driver licensing and control procedures, some that are now a menace would be excluded from the highways. On the other hand, the psychological and psychiatric characteristics of individuals which determine whether they will be good or bad drivers are not easily determined. It is recognized so far that "a man drives as he lives," but much more is needed to be known about the attitudes and personal adjustments of drivers.

In a study of 35,000 accidents over a twenty year period Schulzinger[4] concluded that chief among the components of the accident syndrome was the mental maladjustment of the accident victim, temporary or prolonged, to his environment. He regards accidents as a widespread endemic affliction, and "the 15 per cent of the population that causes 85 per cent of the accidents" is conceived as a shifting group with new persons constantly joining and leaving. In other words, accident proneness, at least in part, is dependent upon the emotional stresses of the day. As has been previously stated in an editorial in the AMA,[5] the right to drive an automobile must become a sought after privilege and not a vested right. The limited physical and mental capacities needed to learn to drive are no measure of the ability to operate the vehicle safely and responsibly in modern traffic.

We, as physicians, have a responsibility to point out to licensing authorities and to our patients the need for adherence to proper physical standards, on the one hand, and on the other, to work for a system of licensing, supervision, and law enforcement that will reduce the number of irresponsible drivers.

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1. Rusk, Howard A.: The importance of Accident Prevention, New York State Journal of Medicine, 56:3870 (Dec. 15) 1956.

2. Woodward, F. D.: Medical Criticism of Modern Automotive Engineering, J.A.M.A. 138:627 (October 30) 1948.

3. Travelers Insurance Companies: Fatal Fallacies, 1956 Book of Street and Highway Accident Data.

4. Schulzinger, Morris S.: Accident Syndrome; A Clinical Approach, A.M.A. Arch. Ind. Health, 11:66 (January) 1955.

5. Editorial: Death on the Highways, J.A.M.A. 163:262 (Jan. 26) 1957.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

PAUL D. ABRAMSON, M. D.
President
1956 - 1957

Dr. Abramson will have completed his duties as President on May 8, 1957.

Dr. Abramson is a native of Shreveport and received his academic education in the public schools in Shreveport. On graduating from public school, he attended the Louisiana State University and later Tulane, where he received his B.S. degree and graduated in medicine from Tulane in 1929.

Dr. Abramson had his military service in the U. S. Army during World War II serving as a Major, and was Chief of Surgery of a General Hospital in E.T.O.

Dr. Abramson has not only many medical affiliations, but participates quite widely in civic affairs, having served as President of the Shreveport Little Theatre, is a Past-Potentate El Karbah Shrine, is a thirty-second degree K.C.C.H., Scottish Rite Mason, member of the Shreveport Rotary, and is the medical co-ordinator of Shreveport-Bossier City Civil Defense.

Dr. Abramson is a member of the Louisiana State Board of Practical Nurse Examiners, Past President, Louisiana Chapter of American College of Surgeons, Senior Surgeon, North Louisiana Clinic and Hospital, Consultant in Surgery, Veterans Hospital, Shreveport, and Chief of Surgery at the Confederate Memorial Medical Center, Charity Hospital at Shreveport, and Clinical Professor of Surgery, Post Graduate Division, Shreveport, Louisiana State Medical School.

Dr. Abramson is a member of the Shreveport Medical Society; Louisiana State Medical Society; American Medical Association; Surgical Association of Louisiana; South Eastern Surgical Congress; New Orleans Surgical Society; Fellow of American College of Surgeons, and a Diplomate of the American Board of Surgery.

Dr. Paul D. Abramson, our President, has been very active during the past year in performing the arduous duties coincident with the demands of his office. Dr. Abramson has represented the Society at many meetings, both state and national. He has acquitted himself splendidly and has served the Society well and efficiently.

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POSTGRADUATE TELECAST ON "EMOTIONAL PATIENTS IN OFFICE PRACTICE"

The Societies of Kansas, Oklahoma, Louisiana, Florida and North Carolina have agreed to participate in the first "inter-meeting" television seminar, in which Smith, Kline & French Laboratories will link up their five annual meetings by closed-circuit television. The program will originate in Chicago where the panel and case material will be televised to the annual meetings of the five participating medical societies.

TIME: Monday, May 6th, 1-2 P.M. (C.S.T.)

Case histories of patients who so often bring their emotional problems to the general practitioner—and actual clinical interviews— will be presented to a panel of two psychiatrists, one internist, and one general practitioner, for their discussion. Following each presentation of an emotional patient, members of the five medical societies will be asked to participate in a discussion concerning the patient's care and treatment. Special audio equipment will enable this "inter-meeting" exchange to take place.

The panelists will include Dr. C. Knight Aldrich, Psychiatrist, University of Chicago; Dr. C. H. Hardin Branch, Psychiatrist, University of Utah; Dr. E. Irving Baumgartner, Secretary, AMA Section on General Practice; Dr. Andrew S. Tomb, Chairman AAGP Liaison Committee on Mental Health.

Each medical society will provide a moderator who has a background in psychiatry or an internist or general practitioner who has a working knowledge of this particular field.

This will be the first time five medical meetings across the country will be linked into a closed circuit television network, and our Society is indeed fortunate to be one of the participating states in this program. We urge all members to attend this session which will take place on Monday afternoon, May 6th from 1 to 2 P.M. (CST) in the International Room at the Roosevelt Hotel.

This exceptional postgraduate seminar is made possible by the cooperation of the Mental Health Education unit of Smith, Kline & French Laboratories with the AMA Council on Mental Health and the Louisiana State Medical Society.

Do not miss it. You will be sorry if you do. This is a rare opportunity to see such a program.

IMPORTANT

All future orders for the first volume of the Rudolph Matas History of the Louisiana State Medical Society should be sent to J. A. Majors Company, 1301 Tulane Avenue. Make checks for $5.00, plus sales tax, payable to J. A. Majors Company and mail to the above address.

HEALTH INSURANCE

Hospital and medical care payments, to help cover the cost of treatment and physicians' services, amounted to $2.1 billion in 1956, the Health Insurance Institute has reported. This figure, the Institute stated, includes replacement of income lost through sickness or disability. A survey conducted among the country's insurance companies revealed that reimbursements through group insurance plans in force during the year totaled $1.5 billion, or 20.9% over 1955, while payments through individual policies totaled $601 million, a gain of 12.8%, for an over-all increase of 18.5% in benefit payments over 1955.

Payments to policyholders covered under hospital expense insurance, for in-hospital services, amounted to over $855 million, the Institute further reported, with $629 million paid under group policies and $226 million paid by insurance companies to individual policyholders.

Reimbursements to help cover the cost of surgeons' fees amounted to $346 million, with $273 million received by holders of policies under group plans, and $73 million going to persons covered by individual insurance policies.

A total of $58 million was paid to persons under regular medical expense contracts, for non-surgical medical care and treatment, $47 million through group policies, and $11 million to individual policyholders.

Benefit payments to those protected against the cost of serious, or catastrophic illness or accident through major medical expense insurance, including supplemental and non-supplemental coverage to the basic health cost plans, amounted to over $65 million. Group plan payments totaled $62 million, while individual contract benefits were more than $3 million. A further breakdown of the payments made for services covered by major medical expense insurance is as follows:

Hospital expense	$31,641,000
Surgical expense	18,483,000
Medical expense	7,694,000
Nurse	4,185,000
Drugs	1,214,000
Other	1,214,000

In concluding its report of payment for health care by the insurance companies throughout the United States, the Institute stated that the increase in such payments reflects the continued efforts of the public to pay its doctor and hospital bills through the voluntary non-governmental mechanism.

REPORT OF THE 12th RURAL HEALTH CONFERENCE OF THE AMERICAN MEDICAL ASSOCIATION, LOUISVILLE, KENTUCKY, MARCH 7-9, 1957, AT THE BROWN HOTEL

The twelfth Rural Health Conference of the American Medical Association was held in Louisville, Kentucky, with an attendance of about 650 people. The largest representation was from Kentucky and the local areas around Louisville, southern Ohio, and southern Indiana.

The theme this year was "Together We Build" and all of the papers were tuned toward the feeling that the individuals and the communities should work with the medical profession and the other organizations to bring about a better health program for the individual and the community in which he lives.

The enthusiasm of these conferences seems to never play out. The Rural Health Conference has probably done more for public relations than any other one organization within the confines of the American Medical Association. This is the one meeting in which the rural people, the Farm Bureau, the editors of the Farm Magazines, and the rural communities can come in and go over their problems with the doctors, with the Rural Health Committee, with the hospital people, and all the others who are interested in better rural health.

Again and again as these conferences go on we have outstanding people over the country who are willing to contribute to the general knowledge of this group. Every year we see what someone is doing in a rural community to better its health facilities.

The nine members of the Rural Health Council of the American Medical Association are under the able leadership of Dr. F. S. Crockett of Lafayette, Indiana, and all of the men are of broad experience and they represent every section of the country. They have contributed whatever is necessary for the betterment of the section in which they live.

Dr. M. C. Wiginton and your reporter attended this conference in its entirety. Of the twelve conferences held we have been to eleven. Each one missed one on account of illness. We have been on the Rural and Urban Health Committee of the State Society ever since its incipiency. We have each held the presidency of the Louisiana Health Council, and have tried to stimulate interest in Rural Health throughout our state.

It is through the State Medical Society that more doctors are now taking a more active interest in Rural Health affairs.

J. P. Sanders, M. D., Chairman,
Committee on Rural and Urban Health.

LETTER OF THANKS

The following letter has been received from Mrs. Mary Evelyn Parker, Commissioner of Public Welfare; State of Louisiana:

"We would like to thank the doctors throughout the state for their fine cooperation in answering the questionnaire that was sent out by the Louisiana State Medical Society in regard to the Department of Public Welfare.

"We particularly appreciate the services of the individual doctors on the Executive Committee for their endorsement and formation of our Medical Advisory Board. We know that their advice and fine cooperation will be extremely helpful to us in formulating our medical care plan.

"Our special thanks to you, Dr. Abramson, for your splendid cooperation and the hours of your valuable time that you have contributed in conference, to Dr. H. H. Hardy, Chairman of the Medical Indigency Committee, and also to your secretary, Dr. C. G. Cole who devoted so much time to handling this questionnaire.

"We would appreciate having our thanks made known through the Journal of the Louisiana State Medical Society to all the doctors in the state."

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Indepencence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

WORLD CONGRESS OF GASTROENTEROLOGY AND THE 59TH ANNUAL MEETING OF THE AMERICAN GASTROENTEROLOGICAL ASSOCIATION

The World Congress of Gastroenterology was initiated by the International Society of Gastroenterology and is being supported by the International Association of Gastroenterology. The American Gastroenterological Association is acting as the official host for this meeting. Dr. Gordon McHardy is a member of the Central Committee for this meeting and chairman of the Scientific Exhibits Committee.

Physicians and scientists throughout the world

with a common interest in diseases affecting the gastrointestinal tract will have the privilege of convening in one assemblage to share their views. The World Congress of Gastroenterological Societies will meet in Washington, D. C., May 25 through May 31, 1958, at the Sheraton-Park Hotel.

Diseases have been chosen for discussion which show variations in epidemiology and clinical behavior in various parts of the world. Two half day sessions will be devoted to brief presentations of original scientific work carefully selected from centers throughout the world.

Titles and Abstracts to be considered by the Central Committee for presentation at the sessions of the Congress should be submitted through the Secretary of each National Society. The abstracts should not be longer than 300 words. The final date for receiving Titles and Abstracts for consideration by the Central Committee will be June 1, 1957.

Nonmembers of component societies are cordially invited to attend, and should send their registration blank to the Secretary-General. Registration blanks may be obtained through the Secretary of the Congress, and from the officers of your national society.

All inquiries and communications to the congress should be directed to: Dr. H. M. Pollard, Secretary-General, World Congress of Gastroenterology, University Hospital, Ann Arbor, Michigan.

EDUCATION OF DIABETIC PATIENTS

The film "Urine Sugar Analysis for Diabetics", developed in cooperation with the medical profession, is available at no charge to the Medical and Allied Professions through Ames Company, Inc.

The film was made as a visual aid to be used in the education of diabetic patients and shows the relationship between carbohydrates and insulin. It also explains in lay language the meaning of various diabetic conditions. It has been produced on 16 mm. film in color and sound track with a running time of approximately 10 minutes. Appropriate "hand-out" literature accompanies the film.

Showings at Diabetic Clinics, Diabetic Lay Societies and other diabetic groups must be requested by the Medical or Allied Professions to Ames Company, Inc., Elkhart, Indiana or an Ames representative.

REFRESHER COURSES

The following short refresher courses will be given at The Children's Hospital of Philadelphia in May and June 1957.

1. PEDIATRIC ADVANCES FOR PEDIATRICIANS AND GENERAL PRACTITIONERS. May 27 through May 31, 1957. Conducted by the Staff of the Children's Hospital of Philadelphia, in collaboration with the Department of Pediatrics of the University of Pennsylvania and the Staff of the Camden Municipal Hospital.

Tuition—$110.00.

2. PRACTICAL PEDIATRIC HEMATOLOGY. June 3, 4 and 5. Conducted by Irving J. Wolman, M. D. and other members of the Hematology Department of the Children's Hospital, under the auspices of the Graduate School of Medicine, Unisity of Pennsylvania.

Tuition—$75.00.

3. BLOOD GROUP INCOMPATIBILITIES AND ERYTHROBLASTOSIS FETALIS. June 6 and 7. Conducted by Neva Abelson, M. D. and Thomas R. Boggs, Jr., M. D. of the Philadelphia Serum Exchange of the Children's Hospital of Philadelphia, under the auspices of the Graduate School of Medicine, University of Pennsylvania.

Tuition—$50.00.

Inquiries should be addressed to Irving J. Wolman, M. D., Children's Hospital of Philadelphia, 1740 Bainbridge Street, Philadelphia 46, Pa.

FIRST BOOK ON WIRE BRUSH SURGERY PUBLISHED BY LOUISIANA PHYSICIAN

A Tulane University physician has written the first book on a recently developed method for correcting scars caused by acne and other skin defects.

"Wire Brush Surgery", the title of the book, was written by Dr. James W. Burks, Jr., associate clinical professor of medicine in the division of dermatology of Tulane's school of medicine.

While the technique is of very recent origin, it has been editorially endorsed in the "Journal of the American Medical Association" and accepted by the committee on cosmetics of the AMA.

Wire brush surgery, Dr. Burks points out in his book, is a procedure which takes place in a doctor's office, not requiring hospitalization. With the use of a high speed rotary wire brush, various layers of skin are removed to a depth necessary for the removal of the defect.

Healing takes place beneath a crust without scarring in seven to ten days in a manner similar to a brush burn.

New skin develops from the lining of various pores and glands of the skin, Dr. Burks reports. Fortunately the face is richly provided with these pores and glands, so that the most frequent site of this type of surgery also provides the best end results.

The conditions for which the procedure is recommended are: scars caused by acne and pox diseases, scars resulting from accidents, and unwanted tattoos. The procedure follows freezing of the skin which serves the double purpose of anesthetizing and hardening the area to be

planed. Freezing requires 10 to 20 seconds.

The rotary wire brush is then used to the desired depth. The first planing provides from 40 per cent to 60 per cent improvement. Subsequent planings may show added improvement but in diminishing percentages.

Dr. Burks writes that his planing does not provide a miraculous new skin free from all defects. But following wire brush surgery, the glazed, tensed scar tissue is completely gone and fresh skin takes its place and has normal anatomical markng, he points out.

The book was published by Charles C Thomas Co., Springfield, Ill.

HAZARDS OF LOW-PROTEIN DIETS OUTLINED

Two physicians and the American Medical Association's council on foods and nutrition recently warned against the indiscriminate use of new low-protein diets.

They pointed out serious hazards which they said have not been made clear in nonmedical publicity about the so-called "Rockefeller" or "fabulous formula" diets.

Dr. Norman Jolliffe, director of the New York City department of health's bureau of nutrition, questioned the safety and effectiveness of the diets, while the A.M.A. council and Dr. Vincent P. Dole, New York, urged that persons use the diets only if they are under strict medical supervision. Their statements appear in the Aug. 25 Journal of the A.M.A.

All three reports agreed that the diets would be dangerously low in protein content if not used exactly as prescribed and after a doctor's investigation of the individual's condition. Dr. Jolliffe, in fact, said the diets even "as is" are below minimum standards for maintaining body structure and function.

In addition to these warnings, Dr. Dole added a note of discouragement: even the patients on whom the original diets were tested successfully regained weight when they quit the diets.

The diets differ from both of the most common methods—those which call for low-calorie diets balanced in nutrition, and those requiring drastic cuts in fats, sugars, and starches and increases in proteins. Based on experimental diets developed by Dr. Dole and his colleagues at the Rockefeller Institute of Medical Research, both diets call for lowered protein intake.

VIRUS RECOVERED IN CASE OF JAPANESE B ENCEPHALITIS

The virus which causes Japanese B encephalitis has been found for what is probably the first time in a case of the disease brought back to this country from the Far East.

Doctors making the finding said it points up earlier warnings about the possibility of introducing the virus into the U. S. where conditions could allow its spread. The disease, an inflammation of the brain, is related to "sleeping sickness" and polio.

The virus was isolated from the tissue of an American soldier just returned from Korea, according to Lt. Col. Harold E. Shuey (MC) and Lt. Col. Trygve O. Berge (MSC) from the Sixth Army medical laboratory, Fort Baker, Calif. They made their report in the Oct. 6 1956 Journal of the American Medical Association.

Only three other cases of the disease occurring in persons while enroute or after arrival here from the Far East have been reported, and as far as the Army physicians know, no virus was found in those three.

They said the virus could become well established if brought into the western U. S., where other viruses causing other types of encephalitis are prevalent.

Earlier researchers have shown that seven species of mosquitoes in the western U. S. can transmit mouse-brain-adapted strains of the Japanese B encephalitis virus to mice in the laboratory. This means that the disease possibly could be spread in the U. S. if a person infected with the disease (and carrying the virus in his blood) were bitten by one of these mosquitoes.

WOMAN'S AUXILIARY TO THE LOUISIANA STATE MEDICAL SOCIETY

ORLEANS PARISH

Members of the Woman's Auxiliary to the Orleans Parish Medical Society were hostesses at the twentieth annual meeting of The New Orleans Graduate Medical Assembly held March 11-14 at the Municipal Auditorium.

These members staffed the registration desk located in the Main Lobby of the Roosevelt Hotel, and registered the wives of the doctors attending the Assembly meeting; 207 visiting ladies were present. An information center manned also by members, supplied news concerning entertainment, etc.

The scheduled entertainment included: The mornings of March 12 (rained out) and March 13, golf tournament at the Metairie Country Club. Tuesday afternoon there was a tour of the Vieux Carre, with special guides, and Wednesday afternoon A Tea and Fashion Show was held at the Orleans Club. Goldring's had a showing of beautiful spring and summer wardrobes and Coleman E. Adler and Sons, Inc. had a fabulous display of precious jewels.

Receiving at the tea with Mrs. Abe Golden, President of the Woman's Auxiliary to the Orleans Parish Medical Society were Mrs. Jules

Myron Davidson, General Chairman of the Ladies' Registration and Entertainment for the Assembly, Mrs. W. A. K. Seale, President of the Woman's Auxiliary to the Louisiana State Medical Society, Mrs. Eugene Countiss, wife of the President of The New Orleans Graduate Medical Assembly, Mrs. Charles Lafayette Brown, wife of the President-elect of the New Orleans Graduate Medical Assembly, and Mrs. George H. Hauser, wife of the President of the Orleans Parish Medical Society. These ladies formed the Honorary Committee. Alternating and presiding at the tea and coffee tables were the wives of the Past Presidents of the Assembly: Mmes. Thomas B. Sellers, Frederick L. Fenno, John M. Musser, Val H. Fuchs, Charles A. Bahn, H. Theodore Simon, L. C. Chamberlain, William H. Gillentine, Joseph S. D'Antoni, Curtis Tyrone, Edwin H. Lawson, Edgar Hull, Charles B. Odom, Andrew V. Friedrichs, and Donovan C. Browne. The tea girls were Mrs. Abram Oscar Goldsmith, chairman, and Mmes. Jason Collins, Charles Lafayette Brown, Jr., Horace B. Chalstrom, James C. Burns, George T. Schneider, Robert P. Morrow, Jr., Aynaud M. Hebert, Irving Levin, J. Browne Larose, Jr., Charles Farris, Jr., Henry K. Threefoot, Joseph A. Diaz, Fred Brumfield, Richard Vincent, W. H. Harris, Jr., Philip J. Krupp, Jr., Blaise Salatich, Bernard Jacobs, George J. Fruthaler, Jr., J. William Rosenthal, Kenneth Cox, O'Neil L. Pollingue, Morris Klinger, and T. C. Sherwood.

Thursday, March 14 there was a morning and afternoon Harbor Tour on the "Good Neighbor", compliments of the Board of Commissioners of the Port of New Orleans. There was such an overwhelming response to this, two more tours could have been filled.

Besides the Honorary Committee and Tea Girl Chairman mentioned above, Mrs. Davidson had also appointed the following: Registration — Mmes William J. Rein, Edwin H. Lawson, Ruble Moor and J. O. Weilbaecher. Information — Mmes. H. Ashton Thomas, Robert E. Rougelot, Jr., C. Grenes Cole, and Hyder F. Brewster. Transportation—Mmes. Felix A. Planche, Cuthbert J. Brown, J. Theo Brierre, and Mannie Mallowitz. Publicity — Mmes. Robert C. Kelleher, George M. Haik, Benjamin O. Morrison, and L. Sidney Charbonnet. Honored Guests — Mmes. Eugene H. Countiss and Joseph S. D'Antoni. N. O. Harbor Tour — Mmes. Edwin R. Guidry, James H. Allen, Spencer McNair, and Willard Wirth. French Quarter Tour—Mmes. Boni J. DeLaureal and Aynaud F. Hebert. Golf—Mmes. Edwin L. Zander, Charles B. Odom, Percy Philips, and George T. Schneider, Jr. Fashion Show—Mmes. Jules Myron Davidson, Abe Golden, Alton Ochsner, and Albert Habeeb. Tea — Mmes. Charles Lafayette Brown, Francis E. LeJeune, Donovan C. Browne, and Gordon Johnson. Flowers—Mrs. Esmond Fatter.

This was a banner year. The attendance at all events was most gratifying—the tea and floral arrangements never lovelier. A most enjoyable time was had by all, and the ladies of the Auxiliary are already looking forward to next year's assembly when old friendships may be renewed and new ones made.

THIRTY-FOURTH ANNUAL MEETING OF WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

Headquarters for the Auxiliary's meeting will be the Hotel Roosevelt, New York City, June 3-7, 1957. Registration will open June 2. There will be round table discussions of interest and educational value to all physicians' wives June 3 and June 5. Members and guests are invited. The general meeting will be held June 5, 6, and 7, until noon, and a Board of Director's meeting at 1:00 o'clock on June 7. There will be a Post-Convention Workshop for State Presidents, Presidents-Elect, and National Committee Chairmen on Friday, June 7.

Social activities include: June 3, a tea, honoring President and President-Elect. June 4, luncheon in honor of the National Past Presidents, at which Dr. Howard Rusk, Director of the Institute of Physical Medicine and Rehabilitation of the N. Y. U. Bellevue Medical Center, will be guest speaker. June 5, Luncheon in honor of the National President and President-Elect, at which Dr. Dwight H. Murray, President of the AMA, will be the guest speaker. June 6, annual dinner for Auxiliary members, husbands, and guests, at which the guest speaker will be Professor Allen Richard Foley of Dartmouth College.

BOOK REVIEWS

Applied Medical Bibliography for Students; by William Dosite Postell. Springfield, Ill. Charles C Thomas, 1955. pp. 142. Price $4.50.

Publication in the field of medicine is today so extensive that to gain familiarity with the literature the physician must also have access to and familiarity with the indexes to it. Furthermore, he must know how to use libraries, and to use libraries with facility one must have some knowledge of how these storehouses of medical knowledge are organized. Instruction in the use of medical libraries and the indexes to medical literature is today increasingly recognized as a basic part of medical education. Mr. Postell's

new book is written as an aid in teaching medical students how to use the medical library and to instruct him in the principles of medical bibliography. It is the only book available on this subject.

The purpose of the volume as stated by the author is to give students (1) a better understanding of the arrangement and organization of the library, (2) a working knowledge of the principal reference works and indexes, and (3) an appreciation of bibliographic methods, including historical bibliography, modern bibliography, and methods of bibliography.

The book will fill a long standing need for the use not only of the medical student, but also of the physician unfamiliar with the keys to medical literature.

MARY LOUISE MARSHALL

Dictionary of Poisons; by Ibert Mellan and Eleanor Mellan, New York Philosophical Library, 1956, Pp. 150, Price $4.75.

Of 34,000 Americans who are killed in the home each year, poisoning ranks third as a cause of death, and a third of these occur in children under five years of age. In addition to accidental deaths from poisoning, the use of toxic agents in suicide lends importance to necessity for first aid care in these cases.

This small and inexpensive volume will prove a useful tool in the physician's office or in the home. The book opens with methods for preparing the various types of emetics, demulcents and cathartics. This is followed by simple directions as to what to do for burns and gas poisoning.

After this introductory material an alphabetized discussion is presented of the common agents of poisoning from acetanilide to zinc phosphide. Possible cause of poisoning, symptoms, antidote and first aid are noted, followed in most cases by the note "Call a Physician Immediately." The volume is offered as a supplement rather than as a substitute for medical care.

MARY LOUISE MARSHALL

Bickham-Callander Surgery of the Alimentary Tract; by Richard T. Schackelford, Philadelphia, Pa., W. B. Saunders Company, 1955, 3 vols., Price $60.00.

This is a gigantic compilation of surgical techniques of the alimentary tract. A work so nearly a complete compendium must be the result of tremendous preparation and research and there has been a need for such a revision for a long time.

Residents in surgery will find it difficult to locate a set of books comparable to these as a refresher course. The novice in surgery will find a wealth of technical information with a minimum expenditure of time. The busy surgeon will find them a handy reference and refresher on procedures. These volumes are well illustrated and the descriptive matter is not detailed to the extent that it becomes boring. No little point should be made of the fact that the descriptive matter is on the same page as the illustration. I do not feel that these volumes are to be recommended for student use because of the lack of detail.

This work is easy to read and I have reviewed it with great pleasure. The author has definitely avoided the use of unnecessary words and his descriptions are crisp. He does, however, give his own choice of procedures, which may or may not be to your liking.

VINCENTE D'INGIANNI, M. D.

Subacute Bacterial Endocarditis; by Andrew W. Kerr, Jr., M. D., Springfield, Illinois, Charles C Thomas, 1955, Pp. 343, Price $6.50.

This is a 265 page monograph, exclusive of the bibliography of 800 references, on a disease of continuing importance and interest. As far as the reviewer is aware, it is the most comprehensive treatise dealing with this subject since the advent of the antibiotic era. There is an interesting historical section, followed by nine chapters covering thoroughly its various clinical aspects. Notable are the clear descriptions of the development of knowledge concerning classical signs such as the Osler node and the Janeway lesion. Following this there is a full discussion of pathogenesis and in the final four chapters, an excellent summary of the present status of antibiotic therapy.

There is little of significance to the clinician concerning subacute bacterial endocarditis which has not received consideration. It should prove a valuable reference work and a useful guide to the vast literature on this disease for some time to come.

E. B. FERGUSON, JR., M. D.

PUBLICATIONS RECEIVED

Doubleday & Co., Inc., N. Y.: Battle for the Mind, by William Sargant.

Grune & Stratton, N. Y.: Ultramicro Methods for Clinical Laboratories, by Edwin M. Knights, Jr., M. D., Roderick F. MacDonald, Ph. D., and Jaan Ploompuu.

Paul B. Hoeber, Inc., N. Y.: The Clinical Management of Varicose Veins, by David Woolfolk Borrow, M. D. (2nd edit.); Coronary Heart Disease, by Milton Plotz, M. D.

Lange Medical Publications, Los Altos, Calif.: General Urology, by Donald R. Smith, M. D.

The C. V. Mosby Co., St. Louis: Clinical Laboratory Methods, by W. E. Bray, M. D. (5th edit.).

Philosophical Library, N. Y.: The Care of the Expectant Mother, by Josephine Barnes, D. M., F. R. C. S. (Eng.).

W. B. Saunders Co., Phila.: Current Therapy 1957, Latest Approved Methods of Treatment for the Practicing Physician, edited by Howard F. Conn, M. D.